Amendments to the Specification:

Please amend the carryover paragraph starting at line 27 at the bottom of page 3 as follows:

Another broad aspect of the invention provides a method of implementing programmable optical add/drop multiplexing. The method includes de-multiplexing, for each one of N optical systems, a respective input WDM optical signal. The respective input WDM optical signals may be fully de-multiplexed into a plurality of optical path signals each having one channel or partially de-multiplexed into a plurality of optical path signals with at least one of the optical path signals having a plurality of channels. The method includes performing an add/drop function of selected ones of the optical path signals and establish through paths of remaining ones of the optical path signals. The method includes multiplexing, for each one of the N optical systems, a plurality of optical path signals into an output WDM optical signal. ~~The method also includes establishing two or more paths of approximately equal optical path lengths between the de-multiplexing and the multiplexing.~~

Please also amend the first full paragraph on page 4 (beginning at line 12) as follows:

~~The paths of approximately equal optical path lengths may be established by providing equivalent functional elements in the paths of approximately equal optical path lengths. Furthermore, express paths may be established in through paths where optical path signal are not added and dropped.~~ The method may be applied to optical systems in which input WDM optical signals have dead-bands such that when the input WDM optical signals are de-multiplexed the dead bands may be included between concurrent optical path signals of the N optical systems. This may result in mitigation of filtering penalties in de-multiplexing the input WDM optical signals and a reduction of effects of cross-talk between the concurrent optical path signals.

Please also delete from page 22 the first paragraph (the title), the second paragraph, and the carryover paragraph onto page 23 as follows:

~~Eliminating Effects of Cross-talk~~

~~In a preferred embodiment of the invention, all paths beginning at any one of the DeMUXs **31, 32** and ending at any one of the MUXs **33, 34** have approximately the same~~

optical path length. This is achieved by having the paths contain similar functional elements. For example, every path includes one of the DSCMs **81** to **88** and **91** to **98** and one of the VGCEs **101** to **108** and **111** to **118** and as such the paths have approximately equal optical path lengths. Since the paths have approximately equal optical path lengths, frequency leakage form one of the paths into other paths remains coherent and is re-combined constructively at a respective one of the MUXs **33**, **34**. For example, frequency leakage, form a path containing the secondary DSCM **85**, into two path containing the secondary DSCMs **84**, **86** results in two signals each carrying frequency leakage within a respective one of the two paths. The two signals and the path signal within the path containing the secondary DSCM **85** are coherent due to the approximately equal optical path lengths and are re-combined at least partially constructively at the DeMUX **33**. As a result, effects of coherent cross-talk (or MPI) are reduced and the integrity of the output WDM signal is maintained at the output **133**.

In some instances completely eliminating coherent cross-talk is not a crucial issue. Therefore, other embodiments of the invention have one or more express paths in which there are no secondary DSCMs, no VGCEs and no optical switches. For example, in another embodiment of the invention there are two express paths. A first express path is between one of a number of outputs of the DeMUX **31** and a respective input of the MUX **33**, and a second express path is between one of a number of outputs of the DeMUX **32** and a respective input of the MUX **34**. For example, in this other embodiment of the invention there are no secondary DSCMs, **81** and **91**, no VGCEs **101** and **111** and no optical switch **121**. Fewer DSCMs, VGCEs and optical switches result in a decrease in complexity of the programmable OADM **10** at the expense of an increase in MPI.